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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/520,869 | 01/11/2005 | Guofu Zhou | NL 020684 | 6502 |

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

| EXAMINER | |
|---|---|
| VERDERAME, ANNA L | |
| ART UNIT | PAPER NUMBER |
| 1795 | |
| MAIL DATE | DELIVERY MODE |
| 02/14/2008 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/520,869 | ZHOU, GUOFU | |
| | Examiner | Art Unit | |
| | ANNA L. VERDERAME | 1795 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *07 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 January 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Amendment*

The amendment filed on 12/07/2007 has been carefully considered. A response is presented below.

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishihara et al. US 2002/0054983 in view Hanaoka et al. 2002/0160306.

Nishihara et al. teaches an optical recording medium as shown in figure 1 which includes an optically separating layer 21 interposed between a first information layer 11 and a second information layer 20. The first information 11 includes a first substrate 1, a lower protective layer 2, a lower interface layer 3, a first recording layer 4, a first upper interface layer 5, a first upper protective layer 6, a first interface layer 7, a first reflective layer 8, a first uppermost interface layer, 9 and a transmittance adjustment layer 10 which are disposed in this order from the side from which the laser beam 23 is incident(0056). This corresponds to applicants L1. The second information layer 20 includes a second lower protective layer 12, a second lower interface layer 13, a second recording layer 14, a second upper interface layer 15, a second upper

protective layer 16, a second interface layer 17, a second reflective layer 18, and a second substrate 19(0057). This corresponds to applicants L0.

Interface layers taught by Nishihara et al. are analogous to the crystallization promoting layers recited by the applicant because of their placement in the medium, their thicknesses and suitable materials for formation of these film are all very similar. The interface layers taught by Nishihara et al. can be formed of Si-N, Al-N, Ti-N, Ta-N, Zr-N, Ge-N, or SiC. The thickness of the interface layers taught by Nishihara et al. are preferably in the range of 1nm to 10 nm and more preferably in the range of 2nm to 5nm(0065 and 0066).

Materials for the first recording layer 4(analogous to applicants recording layer 12) are disclosed at 0067 and include an alloy of $Ge_0Sb_4Te_3$ where Ge is 0 atomic percent, Te is 43 atomic % and Sb is 57 atomic %. The thickness of the first recording layer 4 is preferably 9nm or less and a thickness in the range of 5 to 7 nm is more preferable(0077).

The requirement that the thickness of the optically separating layer be equal to or more than the focal depth is recited at (0082).

The first reflective layer (analogous to applicant's reflective layer 14) is formed so as to make transmission as high as possible and preferably has a thickness in the range of 5 nm to 15 nm and more preferably in the range of 8 nm to 12 nm(0081). In regard to the limitation of claim 7 the reflective film may be made of Cu-Si(0080).

In regard to the limitation of claim 8, Nishihara et al. discloses recording velocities for the media of embodiments 1 and 2 of 3m/sec to 30 m/sec and more preferably 4m/sec to 15 m/sec(0019).

Nishihara et al. does not teach the specific phase-change composition required by claim 1 and claim 5.

Hanaoka et al. teaches a dual-layer optical recording medium as shown in figure 3 comprising a substrate overlaid with dielectric layers, crystallization acceleration layers, recording layers, and reflective/heat dissipating layers(0121) Recording layer compositions are taught in table 1 comparative example 2, table 3 examples 7-8, and table 11 examples 8 and 20-22.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the dual-layer optical recording media taught by Nishihara et al. by forming the first recording layer 4 (analogous to applicant's recording layer 12) of any one of the recording layer compositions taught by Hanaoka et al. in table 1 comparative example 2, table 3 examples 7-8, and table 11 examples 8 and 20-22, based on the use of these compounds in a dual optical recording medium having a similar structure to that of Nishihara et al. and based on the use of Ge-Sb-Te compositions by Nishihara et al.

***Response to Arguments***

The teachings of Nishihara et al. overcome the shortcomings of the combination of references used in the office action mailed on 07/26/2007. The reference specifically recites that interface layer (crystallization promotion layers) have a thickness in the range from 2 to 5 nm. Broader ranges are also taught.

The rejection above depends only on the substitution of particular Ge-Sb-Te recording compositions, taught to be useful in dual-layer optical recording media having a similar structure, in a dual-layer medium where the general use of Ge-Sb-Te recording compositions is taught.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANNA L. VERDERAME whose telephone number is (571)272-6420. The examiner can normally be reached on M-F 8A-4:30P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on (571)272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. L. V./
Examiner, Art Unit 1795

**/Mark F. Huff/**
**Supervisory Patent Examiner, Art Unit 1795**